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Casino Gambling in Germany: Development, Legal Conditions and the Exclusion System

- Working Paper -

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Introduction

Gambling is a leisure activity that has been fascinating people all over the world for centuries. Early forms can be almost traced back to the dawn of humanity. For most people, gambling stays a form of recreation as they are able to keep playing responsibly. For others, however, it can unfortunately take pathological features. With growing awareness of this problem, the amount of literature concerning the manifold facets of this field of research increased. In recent years, a lot of focus has been put on new forms of gambling, like online gambling or fantasy sports. This is mainly owed to their consistently agreed on high risk of addiction. The development of especially online gambling has put the classical types of gambling into the background. This is in so far unfortunate as the German casinos operate a well enforced exclusion system which is based on a protective approach of the legislator. Although not perfect, it could function as an example for other types of gambling. The goal of this paper is to provide a detailed overview about the German casino industry, while putting the main focus on the assessment and evaluation of its exclusion system. Additionally, a novel data set is used to conduct an econometric analysis that tries to identify the main drivers of the variation of exclusions between German municipalities and to assess the impact of proximity. Carving out a profile of excluded gamblers is important to gain more insights about high risk population groups. Only if their distinctive features are known, assistance can be targeted more efficiently. In contrast to most other studies that use individual level survey data, the information used here is aggregated on the municipality level and collected without conducting personal interviews.

The paper is organized as follows. The next section describes the casino industry in Germany, important legal changes, mostly initiated by the introduction of the Inter-state treaty on gambling in 2008, are highlighted. As the main focus is put on the exclusion system in Germany, its regulation and design are elaborated extensively thereafter. The efficiency of the program with entailed recommendations for improvement are explained in detail. The last part of the paper describes the econometric analysis and its results.

The Structure of the Casino Industry in Germany

Just like in other countries, traditional gambling in casinos has a long tradition in Germany. Previous to the establishment of the casinos as we know them today, especially

people from the upper class used to play in so called *Spielhäusern*, which existed since 1396. In 1720, the first casino was founded in Bad Ems and more were to follow. After facing initial difficulties, a prohibition of gambling in France and England led to a significant upswing of German casinos in the 19th century. This development was put to an end in July 1868, when a Prussian law induced restrictions on the casinos and eventually forced their closure by the end of 1872. This zero tolerance policy lasted until the 1930s. This decade brought ease of the stringent law and as of 1938, the establishment of casinos was in principle possible again. However, Baden-Baden was the only casino that had received a license during the Nazi-Regime. This allowance did not last long, during the last year of war and the post-war period it was closed again from 1944 to 1950.

Since the commencement of the federal constitution, casino law falls within the scope of federal state law, a fact that led to currently 16 different legal situations. However, these laws share similar structures and content. They usually regulate location decisions and who will be allowed to operate a casino in case of licensing (governmental versus private operator). Moreover, each state issues additional rules, the Gambling Ordinances, which contain a list of approved games and their playing rules, opening hours and details on exclusion (Gebhardt & Gohrke, 2008, pp. 465–466). These legal foundations will be described in more detail later on in this paper[1].

Development of and Current Situation on the Casino Market

Having briefly discussed the most important features of the history of casino gambling in Germany, the next step is to have a look at the development of the market since World War II and the current situation. .. (2008, pp. 95–112) provides an overview extending till the year 2005. During the post-war period, the allies installed establishments in six cities, until 1970 the number rose to 11. What then followed was a time, where the demand for gambling at casinos grew significantly up to a point where its peak was reached in the last quarter of the 20th century and the early 2000s. This is reflected by a tremendous increase of sites. Between 1970 and 1990, the number has more than quadrupled

[1] See sections on “Important Recent Legal Developments” and “On the Licensing Process”.

from 11 to 45. The German reunification fostered a further increase which led to 81 casinos in 2005 (cf. Hübl, 2008). Despite this upswing in pure numbers of establishments, there has been a stagnation or even decrease of their gross revenues (defined as wagers minus gains of the gamblers) between 2001 and 2014. This can be seen in table 1.

Table 1. The development of gross gambling revenues in Mio € in German casinos.

Year	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
EGMs	*740*	*742*	*713*	*537*	*451*	*403*	*393*	*386*	*374*	*370*
Table Games	*212*	*198*	*210*	*186*	*167*	*154*	*161*	*148*	*148*	*138*
Sum	*952*	*940*	*923*	*723*	*618*	*557*	*554*	*534*	*522*	*508*

Source: Barth (2013) & Bundesverband deutscher Spielbanken (2015)

This negative trend has been stopped, at least for now, as both present German casino associations announced. The gross revenues went up from 508 Mio. € (2014) to 556 Mio. € (2015), this makes an increase of 9.5% (Bundesverband deutscher Spielbanken, 2015). What is also interesting in this context is the composition of the revenues. Until 1993, table games, like Roulette, Poker or Black Jack, accounted for the majority of the profits. In 1994, automated gambling started to outperform the turnover of the classic games and continues to do so tremendously until today. In 2015, 399 Mio. € of gross gambling revenue was earned with slot machines and video terminals. Table games, in comparison, only earned 156 Mio. € (cf. http://bupris.de/fakten/daten/). This points to a decline in the importance of classical gambling, a phenomenon that can be observed worldwide. Due to this decrease in demand, some locations were forced to discontinue table games, as they could not be run in a cost-covering manner. A part of the affected locations switched to the provision of solely electronical gambling, but several also closed down (cf. Hübl, 2008, pp. 98–99). This declining development leads to the fact that in 2015, there have been 66 casinos left in 14 federal states[2]. Mecklenburg-Vorpommern and Thuringia are

[2] In April 2016, a new casino opened in Magdeburg, Saxony-Anhalt, which has not been included into the examination concerning the profile of the excluded gamblers in the empirical part of this paper.

the only two states where no casinos are located at the very moment. Of the 66 establishments, 30 are operated by private, 36 by governmental providers.

Most of these are organized in one of the two casino associations, the *Bundesverband Deutscher Spielbanken (BupriS)*, where the members consist mainly of private operators, and the *Deutsche Spielbanken Verband e.V. (DSbV)* for publicly operated ones. Those communities of interest represent the casinos and take a stand concerning topics like player and youth protection or legal issues[3]. Of the ten states, where private operators can be authorized, six make use of this opportunity. Only in Baden-Württemberg and Schleswig-Holstein, the license is held by governmentally owned companies[4] (Glücksspielaufsichtsbehörden der Länder, 2015, p. 7). Furthermore, 47 casino establishments offer classic table games like Roulette, Black Jack, Baccarat or Poker. The remaining 19 are so-called *dependences* (annexes hereafter), i.e. branches where only electronic gambling machines (EGMs hereafter) and video terminals for poker and roulette are present[5]. In the following subsection, casino regulation in general, as well as the process of becoming a licensee and the entailed (legal) prerequisites are explained in more detail.

On the Licensing Process

This section closely follows a paper by Ennuschat (2015), where he provides a detailed overview about the licensing process and the regulation of casinos in Germany. The basic feature of the licensing model is the limited admission of providers. This procedure has been used in this particular gambling sector for quite a long time now and was also transferred to others, like gaming arcades or sports betting. At the time being, there exist four basic models of casino regulation. One of them is total prohibition, which is in place for online casino gambling. Concerning terrestrial casinos, there are three designs that need to be distinguished. The design depends on the federal state the casino is located in. The first design, a governmental monopoly, is in force in the states of Bavaria, Brandenburg,

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[3] For more information see http://www.deutscher-spielbankenverband.de/ and http://www.bupris.de/

[4] The remaining two states are Thuringia and Mecklenburg-Vorpommern, where no casino is located at the moment.

[5] Information about the assortment of games of each casino has been collected from their individual homepages.

Bremen, North Rhine-Westphalia, Saarland and Saxony. Here, only the government itself or a company that is completely or at least in majority owned by the state (irrelevant if under private or public law) can act as an operator. Secondly, a true licensing model is used in Baden-Wuerttemberg, Berlin, Hamburg, Mecklenburg-Western Pomerania, Lower Saxony, Rhineland-Palatinate, Schleswig-Holstein, Thuringia and Saxony-Anhalt. These states provide the possibility that, in limited number, private firms without any (entrepreneurial) participation of the state can become the licensee of a casino (Höxter, 2009, p. 2). Here the states can decide whether they want to operate the casino themselves or hand them over to a private concessionaire. The fourth design, an operator model, is a special case which is only present in the federal state of Hessen. In this mixture of the preceding two configurations, the legislator determines locations, i.e. communities, where casinos are permitted. These communities can then potentially be authorized to instruct a private third party to operate the casino. In this context it is worth mentioning that in contrast to earlier times, casinos today are not only allowed in communities that are characterized as being health resorts anymore, but also in metropolitan areas and major cities (cf. Hübl, 2008, p. 105).

The licensing model is basically a tool to restrict the number of the actually rather tolerated than desired establishments. This task has also been taken up by the Inter-state treaty on Gambling, as it obligates the individual states to limit the number of casinos on their territory. Except for this vague requirement, it does not further specify the procurement procedures. Those are to be found within the individual casino state laws. As already mentioned, these laws differ, hence there is no unique national regulation for the licensing process. There are, however, some typical prerequisites that have to be fulfilled. Ennuschat (2015) divides them into personal, factual and formal conditions. The personal ones include for example reliability (in particular regarding economic performance) or professional competence (i.e. expertise in the field of gambling). Among the factual conditions are compliance with the respective gambling law, no threat to public order and security as well as measures aimed to ensure youth and player protection. The formal standards contain the requirement of written applications, time limits or documents that need to be submitted. The selection criteria in case of several applicants are again regulated differently by each federal state. Some outline them only roughly, others even do completely without. The newer laws, however, usually contain more extensive guidelines. This is necessary, as the European Union as well as the constitutional law issued

requirements concerning equal opportunities, transparency and objectivity that have to be met during the selection of concessionaires. Hence the legislators tend to publish at least some baseline criteria for orientation. In general, selection is based on regulatory, economic and fiscal conditions. The duration of the licensing period differs between 10 and 20 years, where most of the states determine a 10 or 15 year period. The extension of the license is predominantly possible, yet conditional on a renewed application or even procurement procedure. This follows from the above stated requirement of transparency and equality of chance demanded by the EU.

The highest decision-making authority concerning gambling is in all cases the Ministry of the Interior of the respective federal state, often in consultation with the ministry of finance (cf. the individual casino laws). However, in contrast to other jurisdictions, the applicants in Germany are not just surrendered to the arbitrariness of the ministries in this not convincingly transparent process. They are granted legal protection and competitors, whose license is denied, can challenge the rejection and demand for judicial review of the selection process (cf. Ennuschat, 2015, pp. 78–84).

Important Recent Legal Developments

In the past ten years, there have been some major changes in the legislature concerning the establishment and operation of casinos, with remarkable focus on the strengthening of player protection. The adjustments have been induced by the introduction of the Interstate treaty on Gambling, the *Glücksspielstaatsvertrag (GlüStV)* in 2008, and a renewed and adapted treaty, the *Glücksspieländerungsstaatsvertrag (GlüÄndStV)* in 2012. For the first time on a national basis, this treaty brought together casino gambling with the other various types of gambling that are also regulated by the federal states. The goal of its introduction was to finally provide a common framework for all games. It does not contain rules concerning the organization, operation or taxation of the establishments, these issues continue to stay within the legal scope of the states. The agreement rather functions as a summary of laws regarding player and youth protection, avoidance of problematic gambling, advertising and exclusion, i.e. topics that are simultaneously valid for all types of gambling provided in Germany (Gebhardt & Gohrke, 2008, p. 481). As an important driver for the decision to issue this contract, Reeckmann (2015, p. 453) instances the fact that, at that time, casinos were the only gambling providers that actively made use of protection tools like exclusion and social concepts. The integration of the casinos into the

treaty then allowed for exploitation of these measures also for other gambling branches. It lays the foundation for the creation of a more comprehensive exclusion system.

The agreement brought several, in parts substantial, new obligations and limitations for the casinos. The most relevant are now shortly summarized. §4, para. 4 GlüStV prohibits the organization of online casino gambling. §5 GlüStV regulates restrictions in advertisement. It must not encourage the participation in gambling or be misleading. The providers are not allowed to use commercials that are specifically targeted at young people or other groups that are known to be at high risk of addictive behavior and there has to be information about the potential of addiction and ways to get help. This led to the fact that many well-established communication measures used by the casinos had to be adapted or even discontinued (cf. Reeckmann, 2015, p. 453). §6 GlüStV obliges all providers to foster reasonable gambling by developing social concepts for player protection. The GlüÄndStV (2012) only brought minor changes for the casinos. Noteworthy is §20, para.1 GlüÄndStV, where the legislator includes a restriction of the number of casinos, but does not put the exact amount into concrete terms (cf. Reeckmann, 2015, pp. 453–455). Alongside these rather general changes, there have also been significant developments and paradigm shifts concerning the exclusion system in Germany. After having elaborated the main features of the program, those will be dealt with in the following section.

The Exclusion System in Germany

The growing importance of exclusions as a means for player protection and harm minimization can be derived from the fact that with §8 GlüStV the program is explicitly mentioned in the Inter-state treaty. Regulated are its scope, types of possible exclusions, minimum duration and the obligation to contribute to the system. Exclusion from gambling houses or casinos has a long tradition. The system we know today is an advancement of historical informal measures. It basically started as a simple ban from entering the casino issued on the basis of domiciliary rights. If people were insulting, disturbing the gaming process or involved in criminal schemes, this was a possibility for operators to get rid of these unwanted guests. Throughout the years, these initially informal bans have been further developed and adjusted, the resulting present systems are well established and mostly formalized programs. They are consistently agreed on to be at least a suitable harm min-

imization strategy, but could also be a measure for pro-active player protection for problematic gamblers (Meyer & Hayer, 2010, pp. 25–26). Especially the opportunity of self-exclusion is a relatively new achievement in most parts of the world. In North America, the first one started in 1989 in Manitoba, Canada (Nowatzki & Williams, 2002, p. 3). In the US, Missouri was the first state to initiate a similar scheme in 1996 (Blaszczynski, Ladouceur, & Nower, 2007; O'Hare, 2004). Furthermore, New Zealand rather recently introduced a program, where self-exclusion is anchored within the New Zealand Gambling Act of 2003 (cf. Townshend, 2007, p. 390). These countries are just mentioned exemplary, self-initiated bans are possible in a lot more countries in Europe, Asia or Australia. The possibility to get more or less formally excluded in Germany exists since the resumption of gambling after World War II. In the beginning, the exclusions were only valid site-wide, but in 1981 a nationwide data exchange initiative was brought to life in order to establish a formalized program (cf. Meyer & Hayer, 2010, pp. 25–26). Another kind of prevention means that was used in the early years was the *Residenzverbot.* In order to avoid extensive gambling and thus possible problematic behavior, people were not allowed to gamble in a casino which was located in their home town directly or within a ban mile of mostly 5 km. This should hinder inhabitants to visit the establishment frequently and impoverish. With growing mobility of people, this kind of prohibition lost its meaning (cf. Diegmann, Hoffmann, & Ohlmann, 2008, p. 80). Hence the federal states have one by one abolished it since the 1980s. The two last states to terminate the ban mile were Bavaria and Baden-Wuerttemberg in 1995 (cf. https://www.casino-baden-baden.de/de/spielangebot/klassisches-spiel/historie-roulette/ and https://www.spielbanken-bayernblog.de/content/frag-den-croupier).

Foundations and Legal Framework

The types of exclusions from gambling in German casinos can be divided into two parts, unilateral external exclusions and bilateral self-exclusions. External exclusions can be seen as a public ultima ratio representing the duty of care of society to protect not only gamblers in advanced stages of the disease but also their environment from further harm. Self-exclusions, on the other hand function more as a prevention measure for gamblers in early stages who recognize their issues and want to be proactive (cf. Bühringer, 2015, pp. 1–2). The first term summarizes the still active ban for inappropriate behavior, which

was the starting point of the schemes[6], and, more important in this paper, the possibility of an exclusion of gamblers mandated by third parties explicitly due to player protection reasons (cf. Meyer & Hayer, 2010, p. 26). The external exclusion can be initiated by relatives or friends of the gambler or the gambling venue itself. Relevant for the validity in that case can be existing danger of gambling addiction, indebtedness, outstanding sums or excessively high wagers by the player. In the process, detailed knowledge about problems is not necessary, a reasonable assumption suffices to start the process (cf. Fiedler, 2015, p. 188).

Self-exclusion, on the other hand, is characterized by the fact that the gamblers themselves initiate the ban. They can apply for it personally at the establishments or by mail, where a copy of an identification document needs to be attached. The maximum duration of the exclusion is not specified by the Inter-state treaty on gambling, but its minimum amounts to one year. On expiry of this period, cancellation can be obtained by written application of the player. The request will, however, only be sustained if the reason for its initiation is no longer present. The gambler carries the burden of proof and needs to provide confirmation. This can be a letter of approval by a therapist or a certificate which validates a now stable financial situation. If the casino discontinues the self-exclusion without verifying the gamblers ability to play responsibly again, it breaches the exclusion contract and can face compensation claims. The sustainment process is not organized in a consistent fashion (cf. Fiedler, 2015, pp. 188–189). Zeltner (2016) describes one exemplary procedure, that is practiced by the *Evangelische Gesellschaft Stuttgart (eva).* The gambler initiates the process by telling the casino he wants to end the ban. After notification by the casino, *eva* sends some information and a questionnaire to the gambler. This questionnaire has to be filled out and a personal consultation meeting will take place. Having completed the evaluation of the meeting, the counsellor will forward a statement about the remaining risk potential to the casino, where persons in charge will decide about resumption or extension of the exclusion. Of course, with this type of process, there remains some residual insecurity, as players could gloss over the true circumstances. Nevertheless, Zeltner concludes that the experiences with this approach have been positive,

[6] Reeckmann (2015, p. 453) states that these bans have to be differentiated from exclusions as they base on §903 of the German Civil Law Code, however, this paper follows Meyer and Hayer (2010, p. 26), who also subsume them under the term exclusion.

hence it has stood the test. However, a consistent cancellation procedure would decrease problems that appear with different scopes of interpretation and evaluation and increase legal certainty, especially for the casinos.

§8 GlüStV, the most essential paragraph of the treaty with respect to the exclusion system, defines some basic, yet important requirements. First, it calls for the establishment and operation of a comprehensive program. Comprehensiveness insures applicability to, at best, all types of gambling. This would make evasive behavior nearly impossible. A huge problem with the present model is the fact that people can only be excluded from certain gambling types which leaves the possibility to simply switch to other ones. At the moment, the bans are legally provided for table games and automated gambling[7] in casinos (§20, para. 2, GlüStV), certain sports bets providers (§21, para. 5, GlüStV) and lotteries with a high potential of addiction (§22, para. 2, GlüStV)[8]. To ensure enforcement, all visitors have to show some identification document upon entering the establishments. If there is no match with the blacklist, the respective person is allowed to gamble. Secondly, it defines who has to be excluded and the minimum duration of the ban, which extends to one year.

The last part of the Inter-state treaty, that is of special relevance for the exclusion system, is §23 GlüStV, where data protection is regulated. It specifies what type of information is allowed to be processed and stored. Amongst them are name, date and place of birth, address, a picture, reason and duration of the exclusion and the reporting authority. Data transmission can be conducted via automated call procedures, transmission to prosecution authorities is permitted, yet has to be documented. Six years after expiration of the ban, the data has to be deleted (cf. Erster Staatsvertrag zur Änderung des Staatsvertrages zum Glücksspielwesen in Deutschland, 2012).

The most striking part about the German exclusion system, and what basically differentiates it from almost all international ones, is the legal assessment of exclusions and the entailed consequences for the casinos. This gets particularly important in cases where

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[7] Reeckmann (2015, p. 452) elaborates, that the ban for automated gambling halls first followed from a decision of the Federal Supreme Court in 2007. This judgement got invalid with the introduction of the Inter-State treaty of 2008, where these halls were included.

[8] Since 2015, the state of Hessen operates an exclusion system for gambling arcades, yet both data files exist in a parallel manner and are not yet interlinked.

excluded gamblers somehow manage to return to the venues and win or lose larger amounts of money. The question then is, whether the gains can be confiscated by the casino or if a gambler has the right to claim the lost money. For purposes of comparison, the focus will first be put on other jurisdictions. In the US, the situation is pretty difficult. It has not been truly clarified yet, whether with application and acceptance of the self-exclusion a contract has been materialized. Napolitano (2003) comes to the conclusion, that with self-exclusion, no real contract exists, as no legal consideration has been exchanged. He describes it as an agreement, where the casino provides a service that it is not legally obliged to offer. Faregh and Leth-Steensen (2009) also discuss these difficulties and further bring up the question, whether gamblers with addiction problems are competent contractual partners at all or if legal validity is not given in these cases. If this was the case, again no contract existed. Meyer and Bachmann (2005, p. 119) argue that such a view is reasonable, however, the evaluation of the legal capacity of gamblers is difficult and its limitation is not generally given. On the other hand, Rhea (2005) argues, that if the gambler is subject to commonly known and also rather harsh consequences like being arrested, one could actually conclude that a contract has been established. This ambivalence in grasping the unclear legal situation aggravates the assessment of liability. Technically, if there is no contract, no breach of contract is possible. Hence, there should be no enforceable consequences, for neither side. Nevertheless, the gambler can be highly sanctioned if a breach is detected. Depending on the jurisdiction, he will be detained, arrested and even charged with trespassing and/or a fine. If there were any gains, the person will not be allowed to keep them. The casino, however, is only liable in cases of gross negligence or willful disregard of its duties (e.g. not removing the excluded from mailing lists etc.) (cf. Kelly & Igelman, 2009, p. 388; Napolitano, 2003, pp. 305–308; Nowatzki & Williams, 2002, p. 9; Rhea, 2005, pp. 464–465). One reason for this approach is certainly a distinct way of thinking that prevails in the North American culture. O'Hare (2004) gets to the heart of it. In her opinion, long term recovery from gambling addiction is only possible, if the person is driven by deeply internal motivation. She emphasizes the voluntariness of the agreement and although external mechanisms, like exclusion, are absolutely necessary, there first has to be a process of change within the gambler. For that to happen, she is convinced that the responsibility and liability has to stay with the affected person and must not be shifted to the casino. Self-exclusion is in its

nature meant to be self-driven, so there should be no problem to simply stay out of gambling venues. Kelly and Igelman (2009) come to a similar conclusion. They cite studies which support the assumption that the responsibility needs to be with the gambler for the exclusion to be efficient. This strengthens the view that a permission of litigation, which would shift huge parts of obligation to the casino, is not the right way to go. A lot of jurisdictions all around the world seem to share this opinion. Lawsuits regarding negligence or breach of duty of care in the gambling context have only rarely been successful for gamblers. In the US and Australia, courts mostly decided in favor of the casinos and cases where the venues went beyond negligence (e.g. encouraged an excluded gambler to wager via mailing lists) have been resolved with confidential settlements. There have been some exceptions, however, the cases were very particular. This complexity left the question of liability concerning negligence in general still untouched. Although rare, there are other examples. In Asia, there have been cases where excluded were discharged from having to pay back debt they made while illicitly gambling and in Austria, a gambler was successful in suing Casino Austria for "gross-malfeasance and negligent behavior". He was awarded 499,729 € (cf. Kelly & Igelman, 2009, pp. 389–402).

Until 2005, the legal framework in Germany, especially concerning the liability of the casino, has been quite similar to those described above. In December of that year, a paradigm shift in the judicial evaluation of the self-exclusion in particular was initiated by a decision of the Federal Supreme Court. In contrast to preceding rulings, it changed its view concerning the protective duties of the casino. The goal of a self-exclusion agreement is to protect gamblers against themselves. Following a period of admission, the person wants to block access to the hazardous gambling establishment with the help of the casino. On the other side, the casino accepts[9] this decision of the gambler by declaring to ban him or her. This means that no more wagering contracts will be entered. Important here is to note the different legal quality of this bilateral exclusion in contrast to the banning of unwanted customers. In the latter case, the casino simply makes use of its domiciliary right, while in the former it recognizes the individual interest of the gambler and complies with it. With acceptance of the self-exclusion the casino enters a contractual

[9] Actually, the casino is even legally required to accept the exclusion, but this does not change the fact, that contracts are entered, hence the reasoning stays valid.

commitment, a fact that is, in contrast to the jurisdictions described above, clear and transparent for all parties involved. Summarizing, the casino has an obligation to protect the excluded person from further financial damages due to legal contractual protective duties, that are anchored in §§ 8, 20 GlüStV. In consequence, if such a protective duty is breached by the casino, i.e. the gambler is able to enter the establishment and loses money, he can enforce a claim for compensation. This follows from the German Civil Law Code §823, para. 2 (cf. Reeckmann, 2015, p. 452).

An additional distinctive feature of the German exclusion system, that follows from §8, para. 2 GlüStV, is the legal obligation of the casino to ban a person who is either suspected to be in danger of addiction or known to be in a financially unstable situation[10]. With this, the legislator recognizes the problem that, especially pathological gamblers are often not reflected enough to get excluded by themselves. This special case of external exclusion entails the same legal consequences as described above for the self-exclusion. This is justified by the assumption, that if a gambler is not able to assess his critical situation and is hence dependent on the external exclusion, the necessity of protecting him is given all the more. In order to justify this expected paternalistic behavior, the legislator appeals to the fact that the operation of a casino is basically undesirable due to the entailed hazards. It receives its legitimacy based on its task of channeling the natural urge to play while maintaining the protection of the addicted or those in danger of addiction. Not only is the casino forced to ban these gamblers, but if it neglects this duty despite obvious hints pointing towards problematic behavior, it could under particular circumstances face serious claims for compensation. This payment includes not only losses but also consequential damages. The players themselves, however, do not have to be afraid of being challenged with contributory negligence. The treaty specifically states that it is the task of the casino to issue the external exclusion in order to keep the players away from the source of danger (cf. Fiedler, 2015, pp. 192–193).

In contrast to the exclusion schemes of most other countries, Germany takes a different path, especially concerning the design as well as liability and the distribution of responsibility. First, most programs only involve self-exclusion, a legal obligation for gambling

[10] A similar approach is pursued by Switzerland, for more information see e.g. http://www.esbk.admin.ch/esbk/de/home/spielbanken/spielsucht/spielsperren.html

venues to issue external exclusions is a crucial peculiarity of the German system. Additionally, self-exclusion is not only a voluntary agreement offered by casinos, but it is based on legally binding contracts which entail transparent consequences. Secondly, the burden to comply with the ban is to a huge part placed upon the gambler in the majority of jurisdictions all over the world. The casinos, on the other hand, are facing only minor or even no inconveniences, exceptions are possible under particular circumstances. German establishments, however, bear a huge part of the responsibility. They are not only responsible to keep excluded gamblers out of the venue, but also obliged to ban gamblers themselves. In other words, this means that they are expected to initiate a ban on access for possibly some of their best customers. If they fail to fulfill this duty, they can be sued by damaged patrons for high amounts of money. Unlike other countries, which support the opinion that self-exclusion should be internally motivated and self-driven, Germany clearly recognizes the limited ability of acute pathological gamblers to properly estimate their situation and evaluate the consequences of their behavior. Gambling addiction is acknowledged as a disease and not just some personal flaw. This argumentation eventually leads to the protective character of the exclusion scheme and the securing role of the casinos, simply as a consequence from this specific point of view.

On the Efficiency of the Program

Having talked about the legal foundations of the system, it remains to evaluate how well it actually works. In his paper, Fiedler (2015) elaborates on the efficiency of the German exclusion program. He predicates its performance on two main evaluation parameters, the exclusion effect and the user frequency. The first measure describes the requirement, that an exclusion should have a positive effect on the gambling behavior of the affected players. Its determination is rather difficult, as it changes with each individual. Nevertheless, there are four dimensions which are positively influencing the exclusion effect. They are: enforcement, early issue of the ban, strong deterrence and the interlocking of exclusion with other opportunities of therapeutic assistance. The utilization rate is defined as the number of pathological gamblers that make use of the possibility of exclusion divided by the sum of all pathological players that take part in the specific game. To sum up, the program would be fruitless, if there would not be a positive effect on the gamblers and/or if no one would make use of the ban. According to Fiedler, both measures are linked in a multiplicative way. This leads to the conclusion that the program will be more effective

if either more addicted will be banned or if the positive effect on the excluded and their environment increases (cf. Fiedler, 2015, p. 189). Following these theoretical considerations, it is left to have a look on the actual situation.

User frequency

As a reminder, the user frequency in this specific case is defined as the number of excluded pathological gamblers divided by the sum of all pathological players. In the best case scenario, every pathological gambler who wants to play less or quit gambling entirely would be excluded. This is, however, not feasible, as the exclusion scheme in Germany still only covers a rather small part of the whole gambling market. Hence, the following calculations are limited to casino gambling. In turn, this means that not all gamblers are relevant, but only those playing in casinos[11]. The user frequency of the exclusion scheme can then be calculated as:

$$u_freq = \frac{excluded\ casino\ gamblers}{pathological\ casino\ gamblers}.$$

In a first step, the denominator of this fraction needs to be determined.

The PAGE study from 2011 found evidence for natural remission. In their survey, 31.3% of pathological gamblers reported total abstinence from gambling in the last 12 months, 17.3% were at least able to reduce their days gambled to a maximum of ten. Additionally, there has been a decrease of gambling related problems for those gamblers when the last 12 months are compared to the period before. For the latter extent of time, 63.9% of pathological gamblers report burdensome symptoms, this fraction declines to 36.1% if only the last year is considered. The difference for problematic gamblers is even higher (-61.6 percentage points). This shows that improvement is clearly observable and the view “once an addict always an addict” is outdated (cf. Bühringer, 2015, p. 1; Meyer et al., 2011, pp. 60–61, Table 21). According to this, it could be reasonable to only take

[11] Those banned from lotteries are not considered as their fraction is small, yet increasing. Meyer and Hayer (2010, p. 33) state a relation of 27,393 casino exclusions and 92 from lotteries at the end of 2008, Fiedler (2015, p. 191) reports 25.026 and 482 in 2012.

acute pathological gamblers into consideration for the following calculations. The exclusion file, however, contains a lot of old and probably outdated entries. This serves as a justification to use lifetime instead of 12-months prevalence rates of pathological gambling. Meyer et al. (2011, p. 54) find that 531,490 people in Germany fulfilled the criteria for pathological gambling (scoring on five or more criteria of DSM-IV) at some point in their life. As only casino gamblers matter, additionally the fraction of pathological gamblers mainly playing in those establishments needs to be determined. Becker (2016, pp. 64–65) collected data from gambling addiction treatment facilities in Germany on the main problem type of games of their clients and compares them to earlier results published by Meyer & Hayer (2005). The values are very similar in both studies. A share of 18.5%, or, in absolute terms, 98,326 pathological gamblers consider casino gambling (EGM and table games) to be their major problem. This will be the denominator of the above fraction.

The number of excluded gamblers can simply be extracted from the exclusion file. As of November 2015, it contained 31,118 pure casino bans. This value functions as the nominator of the fraction. The user frequency can then be calculated as

$$u_{freq} = \frac{31{,}188}{98{,}326} = 0.32\ .$$

If it is now assumed, that all excluded players exhibit the diagnosis of pathological gambling, it can be concluded that 32% of them are actually captured by the exclusion system. This fraction of almost one third is pretty high, considering the fact, that reaching 100% is rather unrealistic. As mentioned above, the main goal should be to approach those, who really want to quit or reduce gambling. It makes not much sense to pressure those who don't recognize their problematic behavior into getting excluded.

Nevertheless, compared to other European countries, the number of exclusions in Germany is increasable. This gets obvious when using for example Switzerland as a comparative figure. In 2015, there have been 46.468 registered gamblers, 15.000 more than in Germany. The growth of the number has been constantly at about 3.000 bans during the last ten years (cf. http://www.esbk.admin.ch/esbk/de/home/spielbanken/spielsucht/spielsperren.html). This difference is even more surprising when the essentially lower size of the Swiss population (8.33 Mio compared to 81.2 Mio) and number of casinos (21 compared to 66) is considered. Of course, the legal situations in the two countries are not

exactly the same, yet the comparison shows that there is still room for improvement concerning the user frequency of the German scheme (cf. Petry, Füchtenschnieder-Petry, Brück, & Vogelgesang, 2013, pp. 75–76) .

The exclusion effect

Studies analyzing the exclusion effect conclude that the German scheme indeed has a positive effect on various problems that gambling addiction involves. The fraction of pathological gambling decreases significantly immediately after applying for the ban. Remarkably, this beneficial consequence seems to arise without any additional therapeutic assistance, at least in the majority of the cases (cf. Meyer et al., 2011, pp. 74–75). Although the exclusion can easily be circumvented by simply participating in types of gambling that are not within the scope of the program, a clear reduction in frequency and duration of gambling as well as the stakes can be observed. This leads in turn to an increase in quality of life for the affected person. Meyer and Hayer (2010, pp. 178–179), conducted a longitudinal study, where they report evidence for the immediate positive effect of the ban on the gambler. They find improvement regarding indicators like emotional stress and desire to play as well as psychosocial functional capability. From this they derive a fast occurring relief for the excluded gamblers. These beneficial first impressions are confirmed during the following 12 months by an observable stability in the patterns of change. Ladouceur, Sylvain, and Gosselin (2007, pp. 90–91) and Nelson, Kleschinsky, LaBrie, Kaplan, and Shaffer (2010, p. 138) report similar findings for self-excluders in Missouri and Quebec.

Despite this positive first view, the exclusion effect can still be reinforced. The biggest problem is possibly circumvention of the system. First, there could be people that manage to keep gambling due to a lack of enforcement by the venues. However, insufficient enforcement is not a huge issue in Germany, as the comparison of ID with the exclusion blacklist is working very effectively. Second, there is the possibility that people might simply substitute casino gambling by other types (cf. Fiedler, 2015, p. 191). The question is how big this substitution effect actually is. On the one hand, the decision to get excluded is mostly well-considered and has matured over a substantial period of time. Hence it can be assumed that gamblers really want to quit and are able to recognize the stupidity of simply switching to other types of gambling. Nevertheless, addiction is a disease which

could lead to abandonment of rationality. In the follow up interviews of their study, Nelson et al. (2010, p. 135) find that 17.7% of self-excluded gamblers reported to have quit casino gambling, but not gambling as a whole. Ladouceur et al. (2007, p. 86) report that 50% of their respondents had gambled on other types of games. For Germany, Meyer and Hayer (2010, p. 127) found a mentionable migration from casinos to slot machine gambling in arcades. Before getting excluded, none of the respondents were involved in pure arcade gambling, after four weeks 7.4% of the sample had played there, after 12 months even 18.5%. Additionally, they report continued gambling on slot machines in gastronomy facilities and, for respondents living close to the border, gambling in foreign casinos (cf. Meyer & Hayer, 2010, pp. 179–180). Lischer, Auerbach, and Schwarz (2016, p. 46) conducted a study in Switzerland and found that the majority of excluded gamblers (90%) tend to switch to alternative forms of gambling, mainly foreign casinos. This means that the ban does not lead to abstinence for most of the excluders.

To conclude, such a substitution effect is not too far-fetched. Thus getting rid of this opportunity entails the larger potential for improving the exclusion effect. The encompassing approach is still a work in progress but the legislator is aware of the problem. This can again be seen from §8, para. 1 GlüStV, where the scope of the program is set to be comprehensive. Unfortunately, these requirements have not been successfully implemented yet. Additionally, it would be beneficial if the timespan between the recognition of problematic gambling and getting banned decreased. Today, it takes on average six years until a gambler decides to get excluded (cf. Fiedler, 2015, p. 191). During this extensive period, serious problems can develop. If treatment, initiated by the ban, had started earlier, those could have been avoided or at least attenuated. To sum up, it would further increase the effectiveness of the scheme, if casinos would start to see exclusions as measures of secondary prevention and try to capture the gambler already on the brink to pathological behavior. This requires well trained staff at the establishments, which is able to recognize problems related to gambling and, even more important, willing to intervene. Only 11.2% of the excluded gamblers stated that the casino staff had somehow addressed their critical gambling behavior (cf. Meyer & Hayer, 2008). This is especially mentionable against the background of the operator being legally obliged to ban the player already if solely the danger of addiction is apparent. The low participation rate of the venues is even more incomprehensible if the liability in cases of breach, discussed in the previous section is called to mind. For liability, it makes no difference if the exclusion

is self- or externally initiated. In 2010, only 215 of 2,098 exclusions have been added due to information of third parties. 145 following notices of family or friends and 170 initiated by the casinos (cf. Fiedler, 2015, pp. 191–193; Meyer, 2012, p. 140). Similar results are reported in a Swiss study by Lischer et al. (2016, p. 45), where they find that only 2.2% of bans have been initiated by third parties. Fiedler also raises the question, why not one of the acute pathological gamblers, that lose their money and don't get excluded invoke on §8 GlüStV and sue the casino for compensation. The main problem here lays with the burden of proof for the affected gambler. Especially with table games, it is nearly impossible to retrace the money spent and quantify the losses. In the legal precedence from 2005, which Fiedler presumably refers to, the Federal Supreme Court ruled in favor of a gambler who lost money in the machine hall of a casino, although he was excluded from classical gambling[12]. In this case, the plaintiff went to the casino to play on EGMs. During the course of a day, he withdrew 20 times 500 DM from the tele cash devices located in the establishment and lost the money on the slot machines. The court decided that the casino is obliged to pay 4.985,19 € (9.750 DM) of compensation (cf. Ruling of the Federal Supreme Court, file number III ZR 65/05, Dec. 15, 2005). The distinguishing point here, compared to the situation referred to by Fiedler above, is however the fact that the plaintiff could easily quantify his losses. Additionally, they could be retraced using the slot machines. In classical gambling, such a verification is hardly possible which makes it probably very difficult for gamblers to uphold their case before court.

The last big issue is the poor connection of the exclusion with additional (therapeutic) offers. A better interlocking of these measures would probably increase the chances of healing in the long-run and also be positively correlated with the overall exclusion effect (cf. Fiedler, 2015, p. 192). Other suggestions are e.g. assistance models (cf. Blaszczynski et al., 2007) or reinstatement conditions (cf. Nowatzki & Williams, 2002). Tremblay, Boutin, and Ladouceur (2008) examine the effectiveness of an assistance model where people who choose to exclude get the opportunity to work with a self-exclusion counsellor. The results of the study show, that there might be positive outcomes related to this specific program. Participants were able to reduce gambling activities and the negative consequences on their social as well as financial situation. Concluding, it could by all

[12] At this time, exclusions were only possible for classical games, entrance to the slot machine halls in the casinos did not have to be monitored for banned players.

means be beneficial to consider these innovative models to reinforce the positive exclusion effect.

Recommendations for more efficiency

Following the explanations made above, it gets clear that in order to increase the efficiency of the German exclusion program several measures can be taken. In his paper Fiedler makes numerous suggestions. First, user frequency should be further increased. One promising link here are external exclusions initiated by the gambling establishments. Casinos should take their role in screening and player protection serious and further increase their effort. A possible way to assist casinos in this respect could be to instruct an independent third authority in the administration and organization of the program. This entity installs workers at the casinos, who are trained to recognize early indicators of gambling problems and could immediately provide further help for the suspected person. This would take a lot of pressure off the casinos, as they are commercial enterprises after all and hence do not have a strong incentive to exclude some of their probably most profitable customers. However, the application of such an entity could also be considered to be another interference in the already highly regulated business of the casinos. This could complicate the cooperation. Further important in the context of exclusions is the level of awareness about the possibility of initiating a ban as an outsider amongst the non-gambling population. Only if non-affected people, too, know about the program, they can go to their friends or family members and try to persuade them into getting excluded. If that does not work, they can still inform the casino about their conjecture. As casinos are obliged to pursue any hints and exclude people on spec of addiction, this type of ban should be designed in a less restrictive manner. They could, for example, expire after a period of three months, unless the suspicion is somehow supported (e.g. by attempts to circumvent the exclusion etc.).

However, even if the gambling establishments exclude more gamblers, it will never be possible to capture all of the affected. Therefore self-exclusion will keep on playing an important role in the program. In order to increase its user frequency, barriers have to be removed. First, there has to be a strengthening of discretion and confidentiality, as the process of exclusion is often accompanied by doubt and shame. For this to be effective, it is important to communicate the ensured privacy towards the gambler in the run-up already, as this can positively influence his or her decision. Secondly, the patrons should

know about the possibility of applying for exclusion via mail. This is of advantage, because the determined gambler does not have to return to the casino and be exposed to triggers. Another frequently discussed recommendation to boost participation is a freely selectable duration of the ban. Permanent bans tend to act as deterrents, whereas control over the term could be more encouraging. As with the external exclusions, awareness is a key factor in increasing utilization frequency of self-exclusions. There are no exact numbers on how many German gamblers have knowledge about the present exclusion system. Although assumed to be relatively high, the share will surely be less than 100%. This should, however, not be a major issue, as it can be assumed that gamblers who are interested in getting help will be able to find information as it is available. Nevertheless, it is helpful to promote the exclusion scheme by publicity work and other marketing strategies in order to further raise awareness.

Additional measures can be used to increase the depth and width effect of the program. The process of exclusion should be more closely linked to other assistance offers. With only personal initiative, gamblers are mostly not able or willing to get further (therapeutic) help. Studies found, however, that if the opportunities are provided directly within the exclusion process, a larger number of gamblers are accepting them. To strengthen the width effect, or in other terms, decrease circumvention possibilities, the program has to be more comprehensive, at best encompassing. In practice, this means that all types of gambling should be involved in that exclusion scheme, as an increase in range will be accompanied by an increase in effectiveness (cf. Fiedler, 2015, pp. 193–196). Meyer and Hayer (2010, pp. 185–187) also make some recommendations for the optimization of the program. They demand the interlocking of the ban with further assistance like debt counselling, too, but dissuade from making it mandatory, as this would lead to deterrence. Following a suggestion made by Blaszczynski et al. (2007), they also encourage the conception of innovative exclusion models, where gamblers are, for example, supported by "Self-Exclusion Counsellors". Concerning the duty of the casinos, they advocate staff trainings, where casino employees not only learn about how to detect problematic gambling behavior but can also improve their conversational skills in order to be better prepared when talking to suspected patrons. To decrease deterrence effects, Meyer and Hayer (2010) are also in favor of transparent, clearly formulated criteria for the annulment of the ban. This enables the players to know exactly what they have to do if they want to

resume gambling. Additionally, these applications should be verified by independent instances. Other recommendations made are consistent with the ones made by Fiedler and have already been discussed above.

Summarizing, the probably best, i.e. mutually acceptable, way to promote the exclusion program is to further increase public awareness and provide low-threshold offers for those who seek help. Additionally, it is important to interlock the ban with additional voluntary therapeutic measures, such as exclusion counsellors, who could also provide information or help beyond explicit gambling issues, for example with debt counselling.

Explaining the Variation of Excluded Gamblers in Germany

To be able to further improve the exclusion scheme, it is important to understand the development process of gambling addiction. Kielholz and Ladewig (1973) describe a model where basically three factors are assumed to be the main drivers in the advancement of a pathological gambling behavior. First, there is the game itself and its entailed structural features. The second key driver is the setting, which includes factors like accessibility and environment of gambling, social acceptability as well as living conditions and employment relationships of the gambler. Lastly, but not less important, there is the individual itself. This is probably the most complex factor as it is shaped by so many different influences. Involved are genetic disposition, neurobiology and personality, family structure during adolescence, gender and sociodemographic characteristics. The following examination aims to add information to the individual factor, especially the sociodemographic aspects. Most studies in the field of gambling analyze data obtained from surveying patrons of gambling venues or excluded gamblers. This paper, however, uses a different approach. Via regression analysis, it is examined which sociodemographic characteristics, collected on municipality level, are suitable for explaining the variation of the number of exclusions between German communities. This is of special interest, because certain authors are able to provide evidence for the fact that the fraction of pathological or problematic gamblers is high among (self-) excluders (cf. Ladouceur et al., 2000). Those findings provide the justification to link exclusions and risk factors for problematic gambling (PG hereafter) and use the latter in trying to explain variations in the first. Exclusions are used as a proxy for PG behavior.

Additionally, there are suggestions that the amount of bans could also be influenced by the proximity to gambling venue. In order to account for these effects, too, proximity

variables are also considered in the modification. Lastly, it is tested if the different prevailing types of casinos are affecting the amount of bans in a distinct manner.

Data

Having established the necessary background information, it now follows to describe the data and report the results. The exclusion file contains external as well as self-exclusions, yet they are not distinguishable as a precise differentiation is unfortunately not possible. Due to data protection reasons, the raw file only included the sum of bans in the municipalities, a key to identify the respective district and the first two digits of the postal code for unique assignment of the bans to the related community. This information was used to match the data with the German municipality key. When particular allocation was not possible, the entries were filtered and removed alongside some duplicates. The described setup entails the possibility to work with the exclusion data on the community level, which is a pretty low level of aggregation. Altogether, the adjusted file contains 31,118 exclusions that are spread over 3,091 German communities. The distribution is, as expected, highly skewed to the right, where 75% of the communities contain one to five bans. The maximum number of 3,724 occurs in the capital city of Berlin. At this point, some data quality problems with the exclusion file have to be emphasized. The list has never been cleared up, so it probably contains also people that are already dead or have changed their residency by now. Basically this means that there are a lot of entries that only exist on paper anymore. Unfortunately, this leads to a possibly large amount of noise in the data, which could affect the results.

To be able to work with the data in the geographical information system ArcGIS, coordinates of the community centroids have been obtained from the homepage of the German Federal Statistical Office. This file was then matched with sociodemographic data retrieved from the census database of the statistical offices of the Federation and the Länder. Whenever data was not available from the latter source, missing variables were compensated with information from the Regional Database, which focuses on community data, again run by the Statistical Offices of the Federation and the Länder. The different files were unambiguously matched using the municipality key. The main sociodemographic variables of interest were gender, age, marital status, education, employment status and migration background, as certain features of them have been agreed on rather consistently to increase the probability of being involved in (pathological) gambling. Several authors

identify being male and of younger age (20 to 30 years), low education, being unemployed and having a migration background as potential risk factors (Bühriger, Kraus, Sonntag, Pfeiffer-Gerschel, & Steiner, 2007; Haß & Lang, 2015; Ladouceur et al., 2000). Men and young people might have a higher affinity to taking risks than women and older people, who potentially have also a family to support. Lower educated people probably are more prone to the promises of easy gains without much effort and cannot properly asses the true odds of winning. Unemployed persons have a lot of free time and gambling might seem as an entertaining way to fill it. Additionally, there is of course the chance of a huge win, money that could take them out of their desperate situation (cf. Albers & Hübl, 1997). A similar consideration holds for migrants. Many of them are situated within low socio-economic classes, so gambling could be seen as a way out. Furthermore, a lot of them participate in leisure activities that are passive and lacking content, hence boredom could be another reason for them to gamble (cf. Tuncay, 2016). In a recent paper, Botterill, Gill, McLaren, and Gomez (2016) analyze the effect of the marital status on problematic gambling behavior of older adults in Australia. They suggest that the observed relationship between marital status and gambling problems is actually mainly driven by loneliness, which is known to be a risk factor in the development of the addiction. This is the case for older citizens, but surely not only for them. As loneliness cannot be captured with the dataset used in this paper, marital status serves as a legitimate proxy. Of course, these risk factors change with the type of gambling, nevertheless those mentioned above serve as benchmarks in the following analysis. The basic research question is then, whether the sociodemographic factors identified in prior studies are also able to explain the variation in the number of exclusions from casinos.

Additionally, a proximity measure is included into the analysis to capture possible locational effects and increase the explanatory power of the model. The question if geographical proximity to casinos has an influence on the prevalence of problematic gambling behavior has occupied numerous authors. Although the results are mixed, there are studies that provide evidence for the hypothesis that the probability of gambling related problems increases with increasing closeness to gaming establishments. Rush, Veldhuizen, and Adlaf (2007) analyzed the geographic variation in the occurrence of problematic gambling behavior in Canada. As explanatory variables they used demographic variables as well as closeness to treatment facilities and gambling establishments and find that the proximity to casinos improves the prediction of risk for problematic gambling. LaBrie et

al. (2007) find significant correlation between the self-exclusion enrollment rates and the distance of the excluded to the nearest casino. Finally, Welte, Barnes, Tidwell, Hoffman, and Wieczorek (2015) examined the effect of the distance to the nearest gambling venue or horse track on the degree of gambling involvement in U.S. adults. Within a critical radius, determined by them to be 30 miles, they estimated that the presence of one casino led to a 3.9% probability to be a problem gambler, six or more venues increased this chance to 6.2%[13]. According to these results, it seems to be the case that exposure to gambling establishments is somehow connected to the extent of gambling as such but also to problematic gambling behavior. From the consideration that getting excluded is very likely also an expression of said problematic behavior it follows to include proximity measures into the analysis. One would expect a higher number of exclusions in communities close to casinos. Said exposure theory is visually supported by a map displaying the exclusion density as can be seen on the left hand side of Figure 1. The darker/red areas mark communities with a higher exclusion density. It is obvious that said density is higher around communities where a casino (indicated by dots) is located. Where no establishment is around, the density is typically lower. Using ArcGIS, additionally a Hot-Spot-Analysis has been conducted. This is presented in the right map of Figure 1.

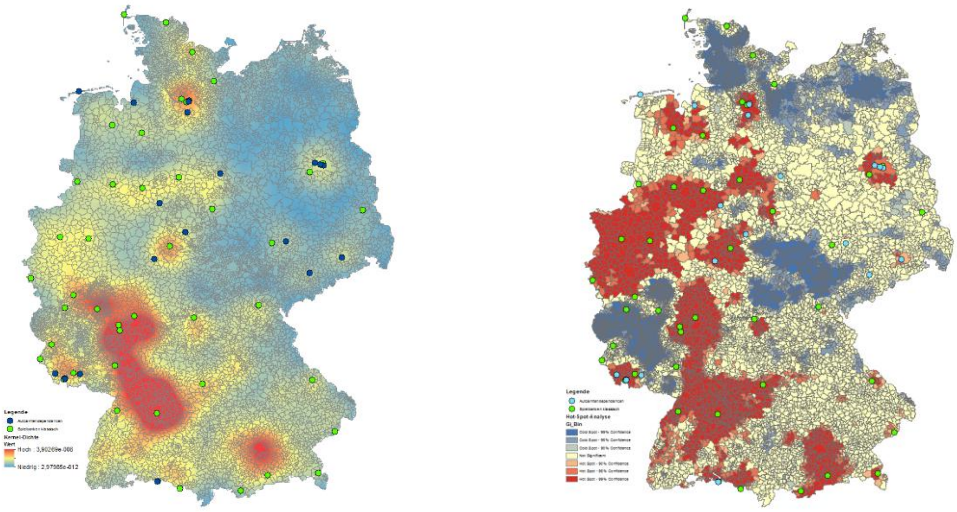

Figure 1. Density map and Hop-Spot-Analysis of exclusions in Germany.

[13] For a more extensive overview see Tong and Chim (2013).

The darker parts indicate areas where a significantly more exclusions are present. It can be seen that, with few exceptions, the darker colored communities are mainly located around casinos (indicated by dots) whereas in the lighter areas no gambling establishment is present.

It is left to discuss the definition of the individual variables used in the analysis. An overview can be found in table 2. All sociodemographic variables entered the model as shares *per 1000 inhabitants* to get rid of population effects that could drive the magnitude of the coefficients in an unwanted way and possibly cause multicollinearity.

Proximity is measured by one variable capturing distance to the closest casino. The minimum distances between the communities and the closest casino have been calculated with ArcGIS. To attenuate the influence of extreme values the natural logarithm of this distance is used for the examination.

The migration variable includes people with migration background and migration experience since further differentiation did not add information. Following the German Statistical Office, migrants are defined as either foreigners without the German nationality, Germans who immigrated to Germany after 1955 or Germans with at least one parent who immigrated to Germany after 1955. People with migration experience form a subgroup of migrants who have not been born in Germany and hence immigrated (cf. Statistisches Bundesamt, 2013, p. 25).

The educational variable contains the number of people with German "Abitur" (high school degree) or advanced technical college certificate, in other words, it captures the group of highly educated. The unemployment variable encompasses all people of a community that match the definition of unemployment by the German Federal Labor Office (cf. https://statistik.arbeitsagentur.de). The addresses of the casinos were obtained from their individual homepages and then geocoded using www.gpskoordinaten.de. Information about the assortment of games (table games and/or automated games) was also retrieved online. According to that, 47 casinos offer classical table games whereas 19 provide solely automated gambling.

Furthermore, some control variables have been found to be reasonable extensions. First, it has to be accounted for the fact that people of the newly-formed German states seem to visit casinos less frequently due to the lower density of establishments and the below average income (cf. Hübl, 2008). This can also be seen in figure 1, where the density of exclusions is clearly lower in the eastern part. Hence an "east dummy" is included, which

is equal to one, if a community is located in the area of the former GDR and zero otherwise. Hübl (2008) also suggests to include an indicator for the degree of urbanization, as this could be influencing gambling behavior in general. This is taken into account with a categorical indicator variable obtained from the Federal Statistical Office's municipal directory information system. Three degrees are considered at first, from populated densely over moderately to sparsely. Later on, the variable was reduced to one dummy variable for sparsely populated areas due to facilitate interpretation.

Table 2. Definition of Variables.

Variable	**Measure**	**Mean**
(1) Exclusions		
Exclusions	Share of exclusions apparent in a community	0.61446
(2) Socioeconomic variables		
Male	Share of men in a community	491.9
Age 30-39	Share of people between 30-39 years of age	110.57
No partnership	Sum of Shares of singles, divorced, widowed	513.65
Education	Share of people with *Abitur* or advanced technical college certificate	205.4
Unemployment	Share of unemployed people per community	21.45
Migration	Share of people with migration background and/or migration experience	166.71
(3) Proximity variables		
Distance	Logarithm of the distance to the closest casino (simple distance mean = 37 km)	10.24
(4) Casino dummies		
Classical	Dummy variable for casinos which offer classical gambling	
Annex	Dummy variable for casinos which offer solely automated gambling	
(4) Control variables		
East dummy	Dummy variable which equals 1 if a community is located within the former GDR	
Sparsely populated	Dummy variable which equals 1 if a community is located within a sparsely populated area	
Assistance centers	Share of assistance centers in a county	0.0111

All the shares are standardized per 1000 inhabitants

To proxy the influence of additional information sources like counselling centers and similar institutions on the awareness of the exclusion program or sensitization for gambling addiction as a whole, the share of these centers per 1000 inhabitants in a county is also included. The reason to use the county share is to account for the fact that only a small number of communities have such centers. Additionally, a larger radius might be relevant for affected people, as they are probably more confident to choose a center that is not located exactly within their hometown but a little bit further away, in order to maintain their privacy.

While performing this analysis, another question arose, namely whether different types of gambling establishments have different effects on the number of exclusions. For this task, two dummy variables that indicate the immediate presence of a traditional casino offering table games or an automated gambling annex within a community have been included. The first dummy variable is equal to one, if a traditional establishment is located directly within a community, and zero otherwise. The construction of the second dummy variable is similar, it is equal to one if an annex is present and zero for all other cases. For estimation, a simple linear OLS regression has been used. The dependent variable of the model is the share of exclusions in a municipality per 1000 inhabitants.

Results

The results of the regression can be found in table 3. As expected the number of exclusions increases with the share of males. This makes sense, as the prevalence rate amongst men is higher and they seem to have a higher probability of developing problematic gambling behavior which can ultimately result in the decision of restricting themselves from respective establishments (cf. Haß & Lang, 2015). The coefficient is 0.0056 ($p<0.01$). The share of those not living in a partnership also has an influence on the bans. If it increases by one unit, the share of exclusions is decreased by 0.0036 ($p<0.01$). The negative effect of this variable is especially interesting in the light of higher casino gambling prevalence within the group of singles as found by Albers and Hübl (1997). The authors justify this fact with the higher proportion of leisure consumption activities that are usually accompanied by these games, compared to, for example, playing the lottery. One could expect that a higher prevalence rate entails higher probability for problematic behavior and hence more exclusions. However, loneliness, the lack of a support system or not bearing responsibility for a partner or family does not only seem to increase participation,

but also negatively impacts the willingness to take the step to get excluded and finally stop gambling. Although bans initiated by the close environment of the gambler occur rarely, a stable family situation could nevertheless positively influence the decision making process in such a case. This can, however, not be derived from the results of the regression here.

Table 3. Regression Results.

Dependent variable: Share of exclusions

Variable	Coefficient (Standard Error)	P-Value
Intercept	1.3640 (0.9353)	0.1449
Male	0.0056 (0.0017)***	0.0012
Age 30-39	0.0043 (0.0015)***	0.0056
No Partnership	- 0.0036 (0.0007)***	0.0000
Education	0.0000 (0.0003)	0.7492
Unemployment	0.0035 (0.0023)	0.1282
Migration	- 0.0003 (0.0003)	0.2858
East dummy	- 0.2243 (0.0936)**	0.0167
Sparsely populated	0.3374 (0.0419)***	0.0000
Distance	- 0.2335 (0.0272)***	0.0000
Casino games	0.5580 (0.1878)***	0.0030
Automated games	0.6251 (0.3034)**	0.0395
Assistance centers	4.6300 (2.0456)**	0.0237
Number of observations	3,024	
R^2	0.10	
Adjusted R^2	0.10	
F-test value	27.74 , p-value < 0.000***	

*Significance levels: * p ≤0.1, ** p ≤0.05***, p ≤0.01*

The age profile of the excluded gamblers differs from the suggested risk age of being up to 25 or 30 years old. In this analysis, the largest effect could be found within the group

of the 30 to 39 year olds. This is in line with e.g. Ladouceur et al. (2000), Ladouceur et al. (2007) or Lischer, Häfeli, and Villiger (2014), who also find excluders to be rather middle-aged. This makes sense when considering the fact that the duration of this whole process takes quite some time. On average, there are 13.6 years between first starting to gamble and eventually get excluded (cf. Fiedler, 2015). Additionally, young people probably lean towards other types of gambling, e.g. EGMs, online gambling or sports betting while the lifetime prevalence for casino games is higher in older age groups (cf. Haß & Lang, 2015). The coefficient of the age variable is positive and also highly significant, meaning that an increase in the share of one unit of this age group leads to a plus of 0.0043 ($p<0.01$) in the share of exclusions.

The variable concerning migration background does not have a significant impact. According to Tuncay (2016), this is strange, as one would expect a negative effect, which means that in communities with a higher share of migrants less exclusions should occur. This is justified by various reasons. First, migrants could simply visit casinos less frequently and pursue their urge to play in different establishments. Following Hübl (2008), however, the share of foreigners and inhabitants with migration background in casinos is usually high, so assuming a low participation rate is not convincing. A second explanation could be that their way of thinking is shaped distinctly by their culture. A consequence of that would then be a decrease in the willingness to admit problematic behavior and in turn increase the barrier to get help, leading to a lower number of bans. During his work with migrants, Tuncay (2016) experienced that problematic gambling behavior is often accompanied by stigmatization and hence feelings like shame, false pride or honor. Additionally, this ethnic group has a rather passive understanding of sickness and health and only little trust in assistance offers. There might also be language barriers or a simple lack of awareness about the opportunity of getting a ban. All of these factors should lead to the fact that migrants make use of the exclusion less often. Nevertheless, the analysis is not able to provide evidence for this. The same result, namely insignificance, holds for the education coefficient. Usually, it is expected that the influence of higher education is negatively correlated with the participation in gambling, as this group of people has a better ability to realistically evaluate the aspects of games. For casino gambling, however, the situation is different, it even tends to attract the better educated, but not to a significant level (cf. Albers & Hübl, 1997). Hence, due to higher participation rates and probably a better assessment of the situation when first signs of problematic behavior are recognized,

also a positive relationship could be expected for the influence of schooling on exclusions. The same holds for unemployment, which also has no significant influence on the share of exclusions. As all three variables are usually good predictors in the gambling context, the question is why they fail in this particular case. An unfortunately rather likely explanation could be the flaws in the data as already mentioned above. Those lead to a lot of noise, which in turn lowers the precision of the estimation. This involves higher standard errors and hence an underestimation of the t-values, which has a clear influence on significance levels (cf. Pischke, 2007). This means that even if there is an effect, the data is not able to provide significance for it.

The dummy variable for municipalities in East Germany is, as expected from visual inspection, negative and significant. Communities in the former GDR exhibit on average 0.2243 ($p<0.05$) less exclusions than those in western Germany. This is probably due to the already mentioned lower participation rate in general and also the lower density of establishments. Additionally, there were no casinos until after the German unification, hence the western part has a lead in being able to issue exclusions, especially considering the unadjusted data set which might contain old bans that have never been cleared. The population density indicator shows a rather interesting result. If the community is considered to be sparsely populated, this has a significantly higher influence on the number of exclusions than in the baseline case, which is a densely populated community. In those areas, the average of the share of exclusions is 0.3374 points higher than in highly urbanized ones.

The dummies for casino games and automated gambling are equal to one, if an establishment is present within a community, which means that those coefficients basically capture the extreme situation of being located in direct proximity to a casino. The coefficients for both dummies are significant and positive. The immediate presence of a casino that offers traditional games increases the share of exclusions by 0.5580 ($p<0.01$), an automated gambling annex by 0.6251 ($p<0.05$). Again, this is compared to the baseline case of no gambling establishment being there. The difference between both coefficients is, however, not significant, so there is no evidence that one type of establishment has more or less impact on exclusions than the other. This supports the hypothesis that close proximity to a casino has a positive effect on the number of excluded gamblers. The previous finding is backed up by the effect of the distance to the closest venue on the number of exclusions, which is negative, as expected, and highly significant. If the distance increases, this leads

to a 0.2335 ($p<0.01$) lower share of bans. The share of counselling centers per 1000 inhabitants of a county also has a significant positive effect on exclusions. If this share rises by one unit, the share of exclusions increases by 4.6300 ($p<0.05$. This could be evidence for higher awareness of the program in areas where more information and assistance is offered to gamblers.

Conclusion

The aim of this paper is to provide an overview about the German casino gambling industry as a whole and the identification of its particularities, while putting a special focus on the present exclusion system. To achieve that, the foundations were laid by examining general developments on the market as well as pointing out recent legal changes, like the introduction of the Inter-state treaty on gambling and its consequences for the casinos. Additionally, the application process and the basis for regulation of the establishments has been presented in detail. This general part was then followed by an extensive description of the German exclusion system, where the program was set in contrast to those present in other, especially North American jurisdictions in order to illuminate its unique features.

Secondly, the focus is shifted on the development of a profile of excluders from German casinos by examining, whether the established risk factors also are significant predictors for the number of bans in German communities. To our knowledge, there is no work explicitly analyzing casino patrons. Using a unique dataset, the approach brought some interesting insights. Some of the considered variables can be confirmed to serve this task in the given framework, whilst others did not yield a statistically significant impact. The most important sociodemographic factors are male gender, being between 30 and 39 years old, and not living in a partnership. The shares of the first two variables have a positive, the latter one a negative influence. Education, unemployment, and migration status, which are usually agreed on to be good predictors, did not exhibit significant results. However, it would be wrong to neglect them, as the outcome is probably owed to noise in the data, which lowers the precision of the estimation and could lead to insignificance. The coefficients of the variables that have been included to capture proximity turn out to be significant and bigger in magnitude than those of the sociodemographic factors. Distance to the next casino and the share of exclusions are inversely related, if the distance increases, the share of bans will decrease. The dummy variables capturing immediate

proximity to gambling establishments also provide evidence for this pattern. If a classical casino or an annex is present in a community, this has a positive impact on the share of excluders. Considering only the proximity dimension of availability, the results are in favor of the hypothesis that higher availability could be a predictor for an increase of bans, which serve as a proxy for PG.

The additionally included control variables also yield significant results. The coefficient of the indicator for a sparsely populated region shows that the share of excluders in said areas is on average higher than in dense ones. Furthermore, the share of assistance centers in a county positively drives the share of bans. The dummy variable indicating communities in the former GDR turns out to be negatively associated with the dependent variable. This makes absolute sense, considering the different developments of the gambling markets in these two regions between 1950 and 1990.

However, the magnitude of the distinct effects on the amount of exclusions is rather small and the model is only able to explain about 10% of the variation in the number of bans, which is a rather small fraction. This is very likely owed to the fact that although problematic or pathological gambling is in parts driven by external sociodemographic factors like age, gender or the marital status, a lot of the behavior is facilitated by internal predisposition which cannot be captured with this type of analysis. Nevertheless, many of the proposed risk or, more neutrally stated, influence factors can be confirmed by this approach, which has been specifically adapted to the German terrestrial casino patrons.

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